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STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Application for a
Route Permit for the Pleasant Valley to
Byron 161 kV Transmission Line
Project and

In the Matter of the Application of
Northern States Power Company, d/b/a
Xcel Energy, for a Certificate of Need
for a 161 kV Transmission Line in
Dodge, Olmstead, and Mower Counties
in Southeastern Minnesota

**FINDINGS OF FACT,
CONCLUSIONS,
RECOMMENDATION, AND
SUMMARY OF TESTIMONY**

Public and evidentiary hearings were held before Manuel J. Cervantes, Administrative Law Judge ("ALJ"), commencing at 2:00 p.m. and 7:00 p.m. on October 26, 2010, at the American Legion Hall, 505 Frontage Road, Byron, Minnesota.

Valerie Herring, Briggs and Morgan, P.A., appeared on behalf of Northern States Power Company, a Minnesota corporation d/b/a Xcel Energy ("Xcel Energy").

Karen Finstad Hammel, Assistant Attorney General, appeared on behalf of the Minnesota Department of Commerce, Office of Energy Security ("OES").

STATEMENT OF ISSUE

Have Applicants satisfied the criteria set forth in Minn. Stat. § 216E.03¹ and Minn. R. Chapter 7850 for a Route Permit for the Pleasant Valley to Byron 161 kV Transmission Line Project, including necessary system connections. If so, what route complies best with applicable statutes and rules?²

¹ Unless otherwise noted, the statutes and rules are cited to the 2009 edition.

² While this proceeding includes a Certificate of Need component (PUC Docket No. 08-992), there are no issues presented, as the ALJ's role in that proceeding is solely to provide a summary of testimony as discussed in Findings, below.

Based on the Findings of Fact and Conclusions that follow, the ALJ makes the following:

RECOMMENDATIONS

1. That the Minnesota Public Utilities Commission (“Commission,” “PUC,” or “MPUC”) determine that all relevant statutory and rule criteria necessary to obtain a Route Permit have been satisfied and that there are no statutory or other requirements that preclude granting a Route Permit based on the record.

2. That the Commission grant a Route Permit to Xcel Energy for the facilities described below, to the effect of authorizing a 161 kV transmission line between Pleasant Valley and Byron and Associated Facilities utilizing Route Alternative 3 as identified in the Final Environmental Impact Statement, placed partially within the right-of-way of an existing 345 kV line between the Pleasant Valley and Byron substations.

3. If Route Alternative 3 is not granted a Permit, the ALJ recommends granting of a Route Permit for the Route Alternative 1 (Preferred Route) further adjusted by Segment A. If this option is selected by the Commission, that Xcel Energy be authorized to double-circuit a subsequent 138 kV transmission line on the Preferred Route for a 1.5 mile portion along 680th Avenue.

4. That a route width of 400 feet be authorized, unless the Commission selects the Preferred Route, in which case the route width be authorized as 400 feet and increasing to 1,100 feet on the west side of that Route for a one half mile segment west of 680th Avenue where the Preferred Route crosses the North Branch Root River.³

5. That Applicants be required to take those actions necessary to implement the Commission’s Orders in this proceeding.

Based on the Hearing record, the ALJ makes the following Findings of Fact and Conclusions:

FINDINGS OF FACT

A. Applicant

1. Xcel Energy is a Minnesota corporation headquartered in Minneapolis, Minnesota. Xcel Energy is a wholly owned subsidiary of Xcel Energy Inc., a utility holding company with its headquarters in Minneapolis. Xcel Energy provides electricity services to approximately 1.2 million customers and natural gas services to 425,000 residential, commercial, and industrial customers in the State.⁴

³ Ex. 5 (Map of Route Width Request)

⁴ Ex. 1 at 12 (Application)

2. Applicant applied for a Route Permit to construct a 161 kV transmission line project from Pleasant Valley to Byron, Minnesota. Applicant maintained that the Project is needed to accommodate two existing 100 MW wind generation projects in Mower County.⁵

B. Procedural Summary

3. On December 3, 2009, Xcel Energy submitted a Route Permit Application (“Application”) for the Project under Minn. R. 7850 and Minn. Stat. ch. 216E. The Project includes a 161 kV transmission line between the Pleasant Valley and Byron substations. (“the Pleasant Valley Project” or the “Project”).⁶

4. Xcel Energy filed an application for a Certificate of Need (CON) for the Project on December 3, 2009.⁷

5. On February 9, 2010, the Commission accepted the Applicant’s Route Permit Application as complete and authorized the OES staff to process the Application under the full review process of Minn. R. 7850.1700 to 7850.2700.⁸

6. The Commission accepted the Applicant’s CON application as complete on February 18, 2010. The Commission directed that the informal review process under Minn. R. 7829.1200 be used for the CON determination and, where possible, joint hearings be conducted in the CON and route permitting process. The ALJ was directed to provide the Commission with a summary of testimony in the CON Docket.⁹

7. On January 8, 2010, Applicants filed Confirmation of Notice including Affidavits of Mailing and Publication as required under Minn. Stat. § 216E.03, subd. 4; Minn. R. 7850.2100, subp. 2; and Minn. R. 7850.2100, subp. 4..¹⁰

8. This matter was assigned to ALJ Manuel J. Cervantes of the Office of Administrative Hearings (“OAH”) and a prehearing conference was held on September 20, 2010. On September 23, 2010, the ALJ issued a Prehearing Order

⁵ Ex. 1, at 1 (Application).

⁶ Ex. 1 (Application).

⁷ In the Matter of the Application of Northern States Power Company, d/b/a Xcel Energy, for a Certificate of Need for a 161 kV Transmission Line in Dodge, Olmstead, and Mower Counties in Southeastern Minnesota, Docket No. E002/CN-08-992, Certificate of Need Application (Dec. 3, 2009), eDocket Document No. 200912-44684-02 (generally, CON Docket).

⁸ In the Matter of the Application for a Route Permit for the Pleasant Valley to Byron 161 kV Transmission Line Project, Docket No. ET2/TL-09-1315, Commission Order (February 18, 2010), eDocket Document No. 20102-47181-01 (generally, Route Docket).

⁹ CON Docket, Commission Order Accepting Application as Substantially Complete, Authorizing Informal Review Process, and Encouraging Joint Proceedings (Feb. 18, 2010), eDocket Document No. 200912-44684-02.

¹⁰ Ex. 2 (Applicant Mailed and Published Notices of Application Filing).

establishing the schedule and procedures for intervention, prefiled testimony, hearing, and other matters.¹¹

9. The Prehearing Order specified an intervention deadline of October 11, 2010. No petitions to intervene were filed.

10. On March 8, 2010, the OES issued a Notice of Public Information and Environmental Impact Statement ("EIS") Scoping meetings.¹²

11. On March 25, 2010, OES held public information and EIS Scoping meetings at the American Legion Hall in Byron, Minnesota. Public comments regarding the scope of the EIS were accepted by OES until April 8, 2010.¹³

12. On July 9, 2010, the OES issued its EIS Scoping Decision that set out the alternatives and issues to be addressed in the Project's EIS.¹⁴

13. On October 11, 2010, Xcel Energy filed direct testimony by Tom Hillstrom, Jason Standing, and Grant Stevenson.¹⁵

14. On October 13, 2010, the OES issued the Draft Environmental Impact Statement ("DEIS").¹⁶

15. On October 14, 2010, the OES issued its Notice of Public Hearing, setting the public hearing on the DEIS for October 26, 2010, to be conducted in conjunction with a public hearing in the Route Permit Docket.¹⁷

16. On October 26, 2010, the ALJ conducted public comment hearings and the evidentiary hearing at the American Legion Hall in Byron, Minnesota. Thirty-six persons attended the afternoon public hearing and 27 persons attended the evening public hearing.

17. Public comments on the Project were accepted by the ALJ until November 8, 2010. Nine written comments were received.

18. On November 30, 2010, OES issued the Final EIS ("FEIS").

¹¹ ALJ Prehearing Order (Sept. 23, 2010) eDocket Document No. 20109-54722-01.

¹² Ex. C (Notice of Public Information and EIS Scoping Meetings).

¹³ *Id.*

¹⁴ Ex. D (Scoping Decision).

¹⁵ Ex. 3 (Hillstrom Direct), Ex. 6 (Standing Direct), and Ex. 7 (Stevenson Direct).

¹⁶ Ex. E (DEIS).

¹⁷ Exs. G and H (Notices of Public Hearing).

19. On December 13, 2010, notice of availability of the FEIS was published in the EQB Monitor.¹⁸

20. The hearing record closed for all purposes on December 8, 2010.

C. Description of the Project

21. The Project primarily consists of a 16 to 18 mile long 161 kV transmission line running between an existing substation in Pleasant Valley Township and an existing substation in the City of Byron.¹⁹ The additional capacity is sought to provide transmission capacity to serve two wind generation facilities.

22. The first facility is the 100 MW Grand Meadow wind farm, owned by Xcel Energy. The second facility is the 100 MW Wapsipinicon wind farm, from which Southern Minnesota Municipal Power Agency purchases the output. Both of these wind generators are operational, but they are limited in the amount of power they deliver to the system. Construction of the Project will allow these facilities to operate at full capacity. The Project is also expected to provide additional outlet capability to serve future generators in the Pleasant Valley Substation area.²⁰

D. Routes Proposed in the Application

23. In the Application, Xcel Energy identified Route Alternative 1 (Preferred Route) and Route Alternative 2 (Alternate Route) for the 161 kV transmission line. Xcel Energy selected these two routes based on an investigation of the overall Project area and input from the public and government agencies about how to minimize impacts.²¹ Xcel Energy also identified a Connector Segment which was designed to allow flexibility to use the north half of either the Preferred or Alternate route with the south half of either route, to create combination routes.²²

24. The Preferred Route is 18.3 miles long. Starting from the Pleasant Valley Substation, the route heads north out of the substation to 310th Street where it turns west until it reaches 680th Avenue. The route then turns north again and travels along 680th Avenue approximately three miles from Mower County into Dodge County where it then turns west along Dodge Mower Road to County Road V (270th Avenue). The route follows County Road V north as it winds its way west then north to CSAH 15. The route then follows CSAH 15 north to 650th Street where it turns east and follows 650th Street until reaching 280th Avenue. The route follows 280th Avenue north until it

¹⁸ EQB Monitor Vol. 34 No. 25 (December 13, 2010) at p. 4
(<http://www.eqb.state.mn.us/documents/EQB%20Monitor%2012-13-2010.pdf>).

¹⁹ Ex. 1 at 3 (Application).

²⁰ Ex. 1 at 1 (Application).

²¹ Ex. 1 at 23-24 (Application).

²² Ex. 3 at 8 (Hillstrom Direct).

reaches the railroad tracks where it turns east and follows those tracks to just south of the Byron Substation. The route then turns north and travels 0.1 miles until it connects to the Byron Substation.²³

25. The Alternate Route is 18.2 miles long. Beginning at the Pleasant Valley Substation, the Alternative Route exits the east side of the substation along 310th Street before turning north and following CSAH 10 out of Mower County and then CSAH 3, County Road 149, and 110th Avenue SW in Olmstead County. The route then turns west for a short distance after crossing over CSAH 17 and travels west along 40th Street SW, then north cross-country until it reaches CSAH 25 and turns east again to the intersection of CSAH 25 and 109th Avenue SW. The cross country portion is approximately 1.2 miles in length. The Alternate Route follows 109th Avenue SW north to Frontier Road SE where it turns west to follow the existing Pleasant Valley–Byron 345 kV transmission line into the Byron Substation.²⁴

26. The Connector Segment, identified by Xcel Energy to allow flexibility in routing between the Preferred Route and Alternate Route, is located at 700th Street in Dodge County and 60th Street in Olmstead County. This segment follows an existing People's Cooperative Services 69 kV transmission line.²⁵

27. The Preferred Route and Alternate Route were developed by Xcel Energy's routing and engineering personnel based on its investigation of the overall Project Area. The routing team considered the location of the facilities; the location of existing distribution and transmission infrastructure; and input from the public and government entities about how to minimize impacts. Throughout the process, Xcel Energy evaluated several route alternatives, considering feedback provided at a public open house meeting and through written comments. Xcel Energy²⁶ also consulted with local, state, and federal agencies associated with the Project Area.

28. During this process, Applicants gathered environmental data, held open houses and work group meetings, collected public comments, and analyzed the statutory and rule factors set forth in the Power Plant Siting Act ("PPSA"), Minn. Stat. ch. 216E, and Minn. R. 7850 to develop the Preferred Route and the Alternate Route for the Project.²⁷

E. Routes Considered in the DEIS

29. A third route alternative (Route Alternative 3) was identified during the EIS Scoping process. Route Alternative 3 is approximately 16.3 miles in length and would

²³ Ex. 3 at 6-7 (Hillstrom Direct).

²⁴ Ex. 3 at 7 (Hillstrom Direct).

²⁵ Ex. 3 at 8 (Hillstrom Direct).

²⁶ Ex. 1 at 24-25 (Application).

²⁷ *Id.*

parallel the existing Pleasant Valley–Byron 345 kV line to the east for its entire length between the Pleasant Valley and Byron substations.²⁸ A portion of the Project right-of-way would overlap with the existing 345 kV transmission line right-of-way.”²⁹

30. In addition to Route Alternative 3, there were three route segment alternatives (Alternative Segment A, Alternative Segment B, and Alternative Segment C) that were proposed during the EIS Scoping process. From the Byron Substation, Alternative Segment A runs south adjacent to the existing Pleasant Valley–Byron 345 kV transmission line for approximately 1.85 miles. At 10th Street SW, Alternative Segment A turns west for approximately 0.5 miles and rejoins the Preferred Route continuing south to the Pleasant Valley Substation.³⁰

31. Alternative Segment B follows the Preferred Route south of the Byron Substation and continues south along 280th Avenue to County Road 8 where it joins the Preferred Route at the junction of County Road 8 and County Road 15.³¹

32. Alternative Segment C was proposed during the scoping process as an alternative that would co-locate the Project’s crossing of Salem Creek with an existing crossing by the Pleasant Valley–Byron 345 kV line. Alternative Segment C uses the Preferred Route to exit the Byron Substation and continues south along 280th Avenue for 1.4 miles and then turns east to follow County Road 25 for 0.55 miles to Route Alternative 3. South of the Salem Creek crossing, the route would either follow Route Alternative 3 to the Pleasant Valley Substation or re-join the Preferred Route or the Alternate Route through the use of the Connector Segment.³²

F. Structure Types and Spans

33. Applicant proposes to construct the majority of the 161 kV transmission line as a single circuit line using single-pole, weathering steel structures with brace post insulators. The height of the single circuit structures will range from 70 to 90 feet. The spans between structures will range from 400 to 650 feet with a right-of-way width of 80 feet.³³

34. Xcel Energy requested the flexibility to use double circuit structures for a 1.5 mile portion of the Preferred Route along 680th Avenue. These double circuit structures would allow the Project to be double circuited with a 138 kV transmission line proposed by Pleasant Valley Wind, LLC (“PVW”). The proposed double circuit structures would be single pole, weathering steel double circuit davit arm structures.

²⁸ Ex. E at S-1-S-2 (DEIS).

²⁹ Ex. E at S-2 (DEIS).

³⁰ Ex. E at S-2 (DEIS).

³¹ Ex. E at S-2 (DEIS).

³² Ex. E at S-2 (DEIS).

³³ Ex. 1 at 37 (Application).

The height of the double circuit structures will range from 90 to 110 feet. The spans between structures will typically range from 400 to 650 feet with a right-of-way of 80 feet.³⁴

35. The proposed 161 kV transmission line will be constructed with single 795 kcmil 26/7 Aluminum Core Steel Supported (“ACSS”) conductor per phase.³⁵

G. Route Widths

36. Xcel Energy has requested a route width of 200 feet on each side of the route alignment (400 feet total width) with the exception of two areas. One of these areas is along the Alternate Route located south of Byron Substation where a 1,000 foot route width was requested.³⁶ Xcel Energy also requested additional route width up to 1,100 feet on the west side of the Preferred Route for a one half mile segment west of 680th Avenue where the Preferred Route crosses the North Branch Root River.³⁷

H. Right-of-Way

37. The right-of-way required for the proposed 161 kV transmission line along either the Preferred Route or Alternate Route is 80 feet.³⁸

38. For Route Alternative 3, the Project transmission line structures could be aligned five feet within the existing right-of-way for the 345 kV transmission line such that the western 40 feet of the Project right-of-way and the eastern five feet of the Project right-of-way would overlap with the existing 345 kV transmission line right-of-way of 150 feet. Placement of the Project structures within the existing 345 kV transmission line right-of-way would reduce the width of the new right-of-way required to approximately 35 feet. If Route Alternative 3 were constructed, the total combined right-of-way for the Project and the existing 345 kV transmission line would be 185 feet.³⁹

I. Project Schedule

39. Xcel Energy expects to begin right-of-way acquisition in the first quarter of 2011 and estimated that the Project will be complete by the first quarter of 2012.⁴⁰

³⁴ Ex. 6 at 3 (Stevenson Direct).

³⁵ Ex. 1 at 37 (Application).

³⁶ Ex. 1 at 15 (Application).

³⁷ Ex. 4 (Route width map).

³⁸ Ex. 1 at 39 (Application).

³⁹ Ex. E at 17 (DEIS).

⁴⁰ Ex. 8 (Project Schedule).

J. Project Costs

40. Xcel Energy estimated that the Project cost, if constructed along the Preferred Route, would be \$10,500,000. If the Project is constructed along the Alternate Route, Xcel Energy estimated the Project cost to be \$10,900,000.⁴¹ If the Project is constructed along Route Alternative 3, Xcel Energy estimated the Project cost to be \$9,700,000.⁴²

K. Substations

41. The associated facilities for the Project include modifications to and equipment additions at the existing Pleasant Valley and Byron substations. Great River Energy will be responsible for the modifications to the Pleasant Valley substation. Great River Energy is seeking local permitting approval for these modifications. The Byron Substation is being modified by Southern Minnesota Municipal Power Agency which is also seeking local permitting approval for these modifications.⁴³

L. Federal, State, and Local Agency Participation

42. In developing the Route alternatives, Xcel Energy consulted with local, state and Federal agencies associated with the Project Area. Xcel Energy indicated that these agencies generally responded by requesting to be updated on further Project developments and informing Xcel Energy of required permits for the Project along with specific applicable guidelines, rules, and regulations. Xcel Energy committed to maintaining communications with these agencies throughout the routing process.⁴⁴

1. Minnesota Department of Natural Resources

43. On November 9, 2010, the Minnesota Department of Natural Resources (“MnDNR”) submitted comments regarding the Project and its potential impact on natural resources. These comments included the following:

Considering route comparisons provided in the DEIS, Alternative 1 appears to have the least overall impact to natural resources. Specifically, Alternative 1 has the least effect on wetlands, the least tree removal at Salem Creek, and avoids a crossing of the South Fork Zumbro River Wildlife Management Area (WMA). Impacts to rare species were described in the DEIS as comparable, with the exception of potential impacts to the state and federally listed threatened Prairie Bush Clover

⁴¹ Ex. 1 at 17 (Application).

⁴² Xcel Energy Nov. 5, 2010 Letter, eDocket Document No. 201011-56267-01.

⁴³ Ex. 1 at 16 (Application).

⁴⁴ Ex. 1 at 27 (Application).

along Alternative 1. Further consideration of rare species will be important for all routes, and particularly important for Alternative 1.

The DEIS Table S-2 titled *Summary of Potential Mitigation Measures* includes the measure of surveying all likely habitat for Prairie Bush Clover, American Ginseng, and Valerian so that structure placement can be sited to avoid known occurrences. The DNR concurs with this recommendation for any of the routes considered. As stated in previous comment letters, if it is possible that the project will impact waterways, then impacts to aquatic organisms should also be addressed. The DEIS states that wetlands and waterways could be spanned. Impacts to rare species would be minimized provided the transmission line spans waterways and wetlands. This would include floodplains, which are potential habitat for the Wood Turtle. Given the presence of rare species (Wood Turtle, Ellipse, and Ozark Minnow) that are vulnerable to deterioration in water quality, especially increased siltation, it is important that effective erosion prevention and sediment control practices be implemented and maintained near the rivers and creeks. The DNR encourages continued project planning to span waterways, wetlands and floodplains as much as possible. If spanning these areas is not possible, then botanical and mussel surveys should be completed in all likely wetland and waterway rare species habitats.

Surveys for rare species are recommended prior to a routing decision. The DNR encourages coordination regarding rare species surveys as early as possible in the route permitting process to (1) provide the most robust comparison of rare species along routes during environmental review and permitting, and (2) plan appropriate scheduling for any needed rare species surveys (some mussel and botanical surveys may be required by the DNR) because survey scheduling may be dependent on species-specific timeframes.

The DNR recommends that the FEIS include a description of potential direct and indirect impacts specific to the South Fork Zumbro River WMA. Descriptions of site-specific potential impacts and potential mitigation measures for public lands are recommended for this project and in all applicable transmission line environmental review documents to help inform agency and public review and to inform the License to Cross Public Lands and Waters Permit.

The DNR supports mitigation offsetting lost functions and values for wetland impacts resulting from conversion of forested wetlands to non-forested wetlands.⁴⁵

⁴⁵ Ex. I (MnDNR Letter, November 9, 2010).

2. Minnesota Department of Transportation

44. On November 8, 2010, the Minnesota Department of Transportation (“Mn/DOT”) submitted a comment letter regarding the DEIS. Mn/DOT expressed continuing concerns about the limitations on any future design for the possible interchange at US Highway 14 and 280th Avenue if the Preferred Route is selected. Mn/DOT also indicated that Segment Alternative A would avoid this possible future interchange location.⁴⁶

3. Local Agencies

45. On October 8, 2008, Xcel Energy met with Vernon Township and Dodge County officials who raised issues regarding future wind generation and its electrical grid connection, farmland impacts, use of existing transmission line easements, and other existing transmission lines in the area.⁴⁷

46. Xcel Energy met with the City of Bryon on October 9, 2009. Issues identified during the meeting included the future Highway 14 interchange at 119th Avenue or CR 15.⁴⁸

4. OES Environmental Review

47. Minnesota statutes and rules require OES to prepare an EIS for the Project.⁴⁹

48. The scoping process is the first step in developing an EIS. OES “shall provide the public with an opportunity to participate in the development of the scope of the environmental impact statement by holding a public meeting and by soliciting public comments.”⁵⁰ During the scoping process, alternative routes may be suggested for evaluation in the environmental impact statement.⁵¹

49. The scoping process “must be used to reduce the scope and bulk of an environmental impact statement by identifying the potentially significant issues and alternatives requiring analysis and establishing the detail into which the issues will be analyzed.”⁵²

⁴⁶ Mn/DOT Nov. 8, 2010 Letter, eDocket Document No. 201011-56293-01.

⁴⁷ Ex. 1 at 27 (Application).

⁴⁸ *Id.*

⁴⁹ Minn. R. 7850.2500, subp. 1.

⁵⁰ Minn. R. 7850.2500, subp. 2.

⁵¹ Minn. R. 7850.2500, subp. 3.

⁵² Minn. R. 7850.2500, subp. 4.

50. At the conclusion of the scoping process, OES must issue a scoping decision which shall address at least the following: 1) the issues to be addressed in the EIS; 2) the alternative sites and routes to be addressed in the EIS; and 3) the schedule for completion of the EIS.⁵³

51. On July 9, 2010, OES issued its Scoping Decision for the EIS. The Scoping Decision identified the topics to be covered in the Project EIS: Project engineering and design; Project construction; and human and environmental resources affected by the Project and each considered route alternative.⁵⁴

52. The next step in OES's environmental review required OES to publish the DEIS and to schedule informational meetings, which provide an opportunity for the public to comment on the DEIS.⁵⁵

53. On October 6, 2009, OES published the DEIS which included a discussion of all of the alternatives and topics required by the Scoping Decision.⁵⁶

54. The OES published notice of the public meeting to be held on the DEIS in the *Byron Review*, the *Rochester Post Bulletin*, and the *Stewartville Star*, from October 16 through October 19, 2010. On October 26, 2010, OES conducted public meetings (in conjunction with those conducted by the ALJ) for the public to comment on the DEIS.⁵⁷

55. Minnesota rules require OES to “respond to timely substantive comments received on the draft environmental impact statement consistent with the scoping decision and prepare the final environmental impact statement.”⁵⁸ OES may “attach to the draft environmental impact statement, the comments received, and its response to comments without preparing a separate document.”⁵⁹

56. Written and oral comments were received by OES during the DEIS comment period. Included in this group are comments from the MnDNR and Mn/DOT.⁶⁰

57. On November 30, 2010, OES published the FEIS.⁶¹

⁵³ Minn. R. 7850.2500, subp. 4.

⁵⁴ Ex. D (Environmental Impact Statement Scoping Decision).

⁵⁵ Minn. R. 7850.2500, subps. 6-7.

⁵⁶ Ex. 23 (DEIS).

⁵⁷ Ex. J (Affidavit of Publication).

⁵⁸ Minn. R. 7850.2500, subp. 9.

⁵⁹ *Id.*

⁶⁰ Ex. I.

⁶¹ See FEIS.

M. Public Comments

58. Oral and written comments were received until November 8, 2010. Generally, persons with residences, buildable lots, or farms along the Preferred Route provided comments in opposition to that route and favored Route Alternative 3. The comments received directly in this proceeding (as opposed to being sent directly to OES as part of the EIS process) are summarized in the Summary of Testimony accompanying this Report.

CRITERIA FOR A ROUTE PERMIT

59. The PPSA requires that route permit determinations “be guided by the state’s goals to conserve resources, minimize environmental impacts, minimize human settlement and other land use conflicts, and ensure the state’s electric energy security through efficient, cost-effective power supply and electric transmission infrastructure.”⁶²

60. Under the PPSA, the Commission and ALJ must be guided by the following responsibilities, procedures, and considerations:

- (1) evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants and high voltage transmission lines and the effects of water and air discharges and electric and magnetic fields resulting from such facilities on public health and welfare, vegetation, animals, materials and aesthetic values, including baseline studies, predictive modeling, and evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment;
- (2) environmental evaluation of sites and routes proposed for future development and expansion and their relationship to the land, water, air and human resources of the state;
- (3) evaluation of the effects of new electric power generation and transmission technologies and systems related to power plants designed to minimize adverse environmental effects;
- (4) evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants;⁶³
- (5) analysis of the direct and indirect economic impact of proposed sites and routes including, but not limited to, productive agricultural land lost or impaired;

⁶² Minn. Stat. § 216E.03, subd. 7.

⁶³ This criterion is not applicable since Applicants have not applied for a route permit for a large electric generating plant.

- (6) evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site and route be accepted;
- (7) evaluation of alternatives to the applicant's proposed site or route proposed pursuant to subdivision 1 and 2;
- (8) evaluation of potential routes that would use or parallel existing railroad and highway rights-of-way;
- (9) evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;
- (10) evaluation of future needs for additional high voltage transmission lines in the same general area as any proposed route, and the advisability of ordering the construction of structures capable of expansion in transmission capacity through multiple circuiting or design modifications;
- (11) evaluation of irreversible and irretrievable commitments of resources should the proposed site or route be approved; and
- (12) when appropriate, consideration of problems raised by other state and federal agencies and local entities.⁶⁴

61. In addition to the PPSA, Minn. R. 7850.4000 provides that no route permit may be issued in violation of site selection criteria and standards found in Minnesota Statutes or Public Utilities Commission Rules. Power line permits must be consistent with state goals to minimize environmental impacts and conflicts with human settlement and other land use. The Commission and ALJ are governed by Minn. R. 7850.4100, which provides for the following factors to be considered when determining whether to issue a route permit for a high voltage transmission line:

- A. effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services;
- B. effects on public health and safety;
- C. effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining;
- D. effects on archaeological and historic resources;
- E. effects on the natural environment, including effects on air and water quality resources and flora and fauna;
- F. effects on rare and unique natural resources;

⁶⁴ Minn. Stat. § 216E.03, subd. 7.

- G. application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity;
- H. use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries;
- I. use of existing large electric power generating plant sites;⁶⁵
- J. use of existing transportation, pipeline, and electrical transmission systems or rights-of-way;
- K. electrical system reliability;
- L. costs of constructing, operating, and maintaining the facility which are dependent on design and route;
- M. adverse human and natural environmental effects which cannot be avoided; and
- N. irreversible and irretrievable commitments of resources.

62. There is sufficient evidence on the record for the Commission to assess the proposed routes and alternatives using the criteria set out above.

APPLICATION OF STATUTORY AND RULE CRITERIA

I. Application of Routing Factors to the 345 kV Transmission Line

A. Effects on Human Settlement

63. Minnesota statutory and rule routing criteria for high voltage transmission lines require consideration of the proposed transmission line route's effect on human settlement, including displacement of residences and businesses; noise created during construction and by operation of the Project; and impacts to aesthetics, cultural values, recreation, and public services.⁶⁶

1. Displacement

64. Safety standards set out in the National Electric Safety Code ("NESC"), and adopted by Xcel Energy, require certain clearances between transmission line facilities and buildings. Xcel Energy has committed to acquiring a right-of-way for the proposed transmission line that is sufficient to maintain these clearances. Xcel Energy

⁶⁵ This criterion is inapplicable since Applicants have not applied for a permit for a large electric generating plant.

⁶⁶ Minn. Stat. § 216E.03, subd. 7(b); Minn. R. 7850.4100(A).

has identified a feasible centerline and right-of-way for each Route Alternative such that all existing residences would be outside the right-of-way and no demolition of residences or displacement of residents would be required.⁶⁷

65. For the Preferred Route, there is one home within 100 feet of the route centerline, 11 homes are within 101-200 feet from the route centerline, and 13 homes are situated between 201-300 feet from the route centerline.⁶⁸

66. For the Alternate Route, there are no homes situated within 100 feet of the route centerline, 14 homes are within 101-200 feet from the route centerline, and 12 homes are within 201-300 feet from the route centerline.⁶⁹

67. For the Route Alternative 3, there are no homes located within 200 feet of the route centerline and only one home is located within 300 feet of the route centerline.⁷⁰

68. Route Alternative 3 has the least impact on human habitation.

2. Noise

69. The Minnesota Pollution Control Agency (“MPCA”) has established standards for the regulation of noise levels.⁷¹

70. For residential, commercial and industrial land, the MPCA noise limits are 60-65 A-weighted decibels (“dBA”) during the daytime and 50-55 dBA at night.⁷²

71. Transmission lines produce noise under certain conditions. The level of noise depends on conductor conditions, voltage level, and weather conditions. Generally, activity related noise levels during the operation and maintenance of transmission lines are minimal and do not exceed the MPCA Noise Limits outside the right-of-way.⁷³

72. The Applicant estimated the noise that would be emitted by the 161 kV line using the transmission line noise level algorithms developed by the Bonneville Power Administration. The Applicant has predicted that the L5 and L50 level of noise measured at the edge of the ROW would be 35.0 and 31.5 dBA, respectively. These

⁶⁷ FEIS, at 25, eDockets Document No. 201011-57001-02.

⁶⁸ FEIS, at 23, Table 6.1.1-1, eDockets Document No. 201011-57001-02.

⁶⁹ FEIS, at 23, Table 6.1.1-1, eDockets Document No. 201011-57001-02.

⁷⁰ FEIS, at 23, Table 6.1.1-1, eDockets Document No. 201011-57001-02.

⁷¹ Minn. R. 7030.0050; FEIS, at 30-31, eDockets Document No. 201011-57001-02.

⁷² *Id.* at 31.

⁷³ *Id.*

predicted noise levels are below the lowest MPCA nighttime L50 limit of 50 dBA for Noise Area Classification 1.⁷⁴

73. The audible noise levels for each of the three Route Alternatives are not predicted to exceed the MPCA Noise Limits outside the right-of-way and “during fair weather . . . [would] likely be very low and seldom noticeable, even when standing directly under the line.”⁷⁵

3. Aesthetics

74. Construction of the proposed facilities will likely affect visual quality and area aesthetics within close proximity of the transmission line. Such effects can occur where any of the Route Alternatives cross creeks or rivers, are located near recreational resources, and are placed near residences, particularly those within 300 feet of the right-of-way centerline.⁷⁶

75. Land use within the Project area is primarily agricultural. Also present in the Project area are residential uses, wind power projects, and industrial land uses. The aesthetic impact of the Project is likely to be only incremental, because there are existing transmission lines within the viewshed in the Project area. These include a 69 kV line owned by Peoples Cooperative, a 69 kV line and 161 kV line owned by Southern Minnesota Municipal Power Agency, a 161 kV line owned by Great River Energy, and a 345 kV line owned by Xcel Energy. Potential aesthetic impacts include disruption to the existing landscape from the addition of transmission lines; loss of trees; and devaluation of high-value or sensitive scenic resources.⁷⁷

76. Xcel Energy recognized that the transmission lines will be a contrast to the surrounding land. The only mitigative measures identified in the Application were siting the transmission line along existing corridors and avoiding residences.⁷⁸

77. The transmission lines will be visible by some residents near the Project for the Preferred and Alternate Route and the Connector Segment. However, both routes maximize the use of existing corridors and avoid residences to the greatest extent practicable.⁷⁹

78. The potential for aesthetic impacts differ among the three route alternatives. Both the Preferred Route and the Alternate Route will cause the most aesthetic impact, by adding a new transmission line to areas that do not have such

⁷⁴ *Id.* at 31.

⁷⁵ *Id.*

⁷⁶ FEIS, at 26-27, eDockets Document No. 201011-57001-02.

⁷⁷ FEIS, at 26, eDockets Document No. 201011-57001-02.

⁷⁸ Ex. 1, at 65 (Application).

⁷⁹ Ex. 1, at 65 (Application).

large facilities and by passing relatively closely to a significant number of homes. Route Alternative 3 has the least aesthetic impact, as it follows an existing, larger transmission line. While placing the 161 kV line on its own poles will have some visual impact, that impact will be incremental and will affect the fewest number of homes and at a greater distance when compared to the other two Alternative Routes.⁸⁰

79. In light of the factors noted in the preceding Finding, the record confirms that Route Alternative 3 will have fewer aesthetic impacts compared to the Preferred and Alternate Routes.

4. Cultural Values

80. The communities in the vicinity of the Project have cultural values arising from agricultural practices (typically corn, soybeans, and grazing), with some manufacturing and tourism. Many residents value their rural or semi-rural lifestyle, the existing farming operations, and agricultural history, and have high-standards for health and safety.⁸¹

81. Xcel Energy proposed to mitigate impacts on cultural values by reducing any impacts on the community.⁸² Of the three route alternatives, Route Alternative 3 poses the least impact on cultural values.

5. Recreation

82. Recreational resources near the Preferred Route, the Alternate Route, and Route Alternative 3 include snowmobile trails and wildlife management areas. In addition, the rivers and tributaries within the vicinity of the Project area are used for recreational activities such as boating and fishing.⁸³

83. The EIS analysis noted that there are no MnDNR designated trout lakes or trout streams within the Study Area, but Salem Creek is considered a popular fishing resource. Salem Creek and other waterways may be used for recreational swimming by the residents of the Study Area. There are no public water access points maintained by local or State governments within the Study Area, and use of these waterways by non-residents is not expected to be significant.⁸⁴ Salem Creek is crossed by all three Route Alternatives at different locations.

84. In addition, eight state wildlife management areas (WMA) are located within the vicinity of the Study Area. These WMAs provide public land for hunting deer,

⁸⁰ FEIS, at 28.

⁸¹ Ex. 1 at p. 65-66 (Application).

⁸² *Id.* at 66.

⁸³ Ex. 1 at 66 (Application).

⁸⁴ FEIS, at 100-101.

small game, pheasants, waterfowl, and turkeys. Hunting may also occur on private lands.⁸⁵ Neither the Preferred Route nor the Alternate Route would be visible from these WMAs. The 161 kV line along Route Alternative 3 may be visible from South Fork Zumbo River WMA. Since the line would run along an existing transmission line, any visual intrusion to users of that WMA would be only slightly increased.⁸⁶

85. There are no designated federal, state, or local parks, located within the Study Area. There are several bicycle trails in Dodge County, but no existing trail intersects any of the Route alternatives. There are three snowmobile trails that intersect all the Route Alternatives.⁸⁷

86. The EIS concluded that the Project will not have any long-term direct impacts on the recreational resources near the Preferred Route, the Alternate Route, or Route Alternative 3.⁸⁸ No significant difference in impacts to recreational activities is likely between the three routes. To minimize the impact on hunting in the area, the Permit may properly restrict construction activities during the spring hunting season for wild turkey, which begins on April 13, 2011 and ends May 26, 2011.⁸⁹

6. Public Services

87. Public services in the Project Area include sewer and water services and existing and future transportation corridors and projects. In the City of Byron, water and sewer services are provided by city-owned wells and wastewater treatment facilities. Outside the city boundaries, water is obtained from wells, and wastewater is treated with individual septic treatment systems.⁹⁰

88. Construction of the Project along any of the three routes is not anticipated to directly or indirectly affect the operation of any existing public services. A proposed highway project includes an interchange on either State Highway 14 at 119th Avenue or at County Road 15 on the western edge of the City of Byron. The proposed transmission line will be constructed before the interchange construction, which is proposed for sometime in the next 10 to 20 years.⁹¹

89. Xcel Energy maintained that a compatible design can be developed prior to construction such that the proposed transmission structures would not interfere with this possible future interchange, if the Preferred Route is selected. In the event that a

⁸⁵ FEIS, at 99-100.

⁸⁶ FEIS, at 102.

⁸⁷ FEIS, at 100.

⁸⁸ FEIS, at 102.

⁸⁹ FEIS, at 69.

⁹⁰ Ex. 1 at 66 (Application).

⁹¹ Ex. 1 at 66 (Application).

compatible design is not achievable, Xcel Energy suggested that a negotiated relocation at a later date would accommodate this interchange.⁹²

90. Despite Xcel Energy's proposed adjustments, Mn/DOT continued to express concerns about potential limitations on future design presented by the presence of a transmission line at this location. Mn/DOT supported crossing Highway 14 where the existing HVTL crosses the highway (Route Alternative 3 or the Preferred Route using Segment A).⁹³

91. Construction of the Project along Route Alternative 3, the Alternate Route, or the Preferred Route using Segment A will not result in direct long-term impacts to any existing or anticipated infrastructure. Construction on the Preferred Route not using Segment A will likely impair anticipated infrastructure. Xcel Energy's proposed accommodations are not effective to prevent this anticipated impairment, absent Segment A.

B. Effects on Public Health and Safety

92. Minnesota high voltage transmission line routing criteria require consideration of the Project's effect on health and safety.⁹⁴

93. The Project will be designed in compliance with local, state, National Electric Safety Code ("NESC"), and the Xcel Energy standards regarding clearance to ground, clearance to crossing utilities, clearance to buildings, strength of materials, and right-of-way widths.⁹⁵

94. Xcel Energy construction crews and/or contract crews will comply with local, state, and NESC standards and Xcel Energy policies regarding installation of facilities and compliance with standard construction practices both during and after installation of the transmission lines. Xcel Energy will post plainly visible unambiguous signage during all construction activities.⁹⁶

95. The proposed transmission lines will be equipped with protective devices (circuit breakers and relays located in the substation where the transmission lines terminate) to safeguard the public if an accident occurs, such as a structure or conductor falling to the ground. In the event of such an accident, the protective equipment will de-energize the transmission line.⁹⁷

⁹² Ex. 4 (Xcel Energy DEIS Comment Letter).

⁹³ Mn/DOT Nov. 8, 2010 Letter, eDocket Document No. 201011-56293-01.

⁹⁴ Minn. Stat. § 216E.03, subd. 7(b)(1); Minn. R. 7850.4100(B).

⁹⁵ Ex. 1 at p. 58 (Application).

⁹⁶ Ex. 1 at p. 58 (Application).

⁹⁷ Ex. 1 at p. 58 (Application).

1. Electric and Magnetic Fields

96. The Commission is required to consider of the effects of electric and magnetic fields resulting from the Project on public health and welfare.⁹⁸

97. Electric and magnetic fields (“EMF”) are produced by natural sources and by the voltages and currents associated with the use of electric power. Electric and magnetic fields also exist near wherever electricity is being generated and transmitted. The amount of electric charge on a metal wire, which is expressed as voltage, creates an electric field on other nearby charges. When electric charges in the conductor are in motion, they produce an electric current, which is measured in amperes, and a wire with an electric current creates a magnetic field (“MF”) that exerts forces on other electric currents. MF levels become lower farther away from the source.⁹⁹

98. The electric and magnetic fields associated with power lines are often designated as extremely-low-frequency EMF (“ELF-EMF”). Although there is no federal regulation, the Minnesota PUC has imposed a permit condition of 8 kV/m for the maximum electric field for previously permitted high voltage transmission lines (HVTLS) (measured at centerline and at 1 meter above ground). There are no federal or Minnesota regulations for the permitted strength of a magnetic field from a transmission line.¹⁰⁰

99. The maximum electric field associated with Applicants’ proposal, measured at one meter above the ground, is calculated to be 1.46 kV/m.¹⁰¹

100. The highest projected MF level that will be created by the Project is approximately 15 mG at the edge of the right-of-way during peak operation.¹⁰²

101. The FEIS contains a thorough discussion of the issues of EMF-ELF exposure and a related issue, stray voltage. Regarding the impact of electric fields, the FEIS states:

A viable cause and effect relationship between the exposure to EMFs and adverse health effects has not been established. The calculated electric fields for the Project at 1 meter (approximately 3.28 feet) above ground are displayed in Table 6.1.6-3. Estimates of the anticipated strength of the magnetic field associated with the Project routes are displayed in Table 6.1.6-4.

⁹⁸ Minn. Stat. § 216E.03, subd. 7.

⁹⁹ FEIS, at 41.

¹⁰⁰ FEIS, at 41.

¹⁰¹ Ex. 1 at 48 (Application).

¹⁰² Ex. 1 at 55 (Application).

The maximum electric field associated with the Project (1.46 kV/m) would be significantly less than the maximum limit of 8 kV/m, which would be a permit condition imposed by the PUC.

The maximum calculated peak magnetic field strength at 1 meter aboveground would be 53.43 mG. The Commission does not impose permit conditions that limit magnetic field strength.¹⁰³

102. The FEIS suggests that EMF-ELF impacts, to whatever extent such impacts exist, can be mitigated through distance from the HVTL, compaction between transmission line phases, and phase cancellation along the HVTL.¹⁰⁴

103. The absence of any demonstrated impact by EMF-ELF exposure supports the conclusion that there is no demonstrated impact on human health and safety that is not adequately addressed by the existing State standards for such exposure. The record shows that the current exposure standard for EMF-ELF is adequately protective of human health and safety. There is no difference in impacts between the three Route Alternatives.

2. Stray Voltage

104. Stray voltage is a condition that can occur at the electric service entrances to structures from distribution lines, not transmission lines. More precisely, stray voltage is a voltage that exists between the neutral wire of the service entrance and grounded objects in buildings such as barns and milking parlors. Transmission lines do not, by themselves, create stray voltage because they do not connect to businesses or residences. Transmission lines can induce stray voltage on a distribution circuit that is parallel to and immediately under the transmission line.¹⁰⁵

105. The FEIS addressed the issue of stray voltage remediation, stating:

The Applicant would address stray voltage issues on a case by case basis (Xcel Energy, 2009a). The three primary methods to reduce or eliminate stray voltage are cancellation, separation, and enhanced grounding. Cancellation entails the arranging of transmission line phase conductors in a configuration to minimize EMF levels, bonding distribution neutral and transmission shield wires together, and bonding an under-built transmission shield wire to distribution neutral wires rather than a normal overhead shield wire. Separation entails increasing the distance between transmission and distribution lines through re-locating distribution lines underground, placing the transmission line on the opposite side of the road as existing distribution lines, or increasing the vertical distance

¹⁰³ FEIS, at 47.

¹⁰⁴ *Id.*

¹⁰⁵ Ex. 1 at 55 (Application).

between the transmission line phase conductor and under-built distribution line. Enhanced grounding would reduce stray voltage potential through connecting counterpoises to the distribution neutral wire and/or transmission shield wire.¹⁰⁶

106. Stray voltage that is induced by the proposed HVTL can be remedied by the Xcel Energy. Conditioning the issuance of a Permit on the remediation of stray voltage conditions caused by the 161 kV line is supported by the record.

3. Interference with Natural Gas Pipelines

107. The southernmost end of the Preferred Route shares the same road corridor as an existing Northern Natural Gas (“NNG”) underground natural gas pipeline along 680th Street. The area of corridor sharing begins at a valve station located on the east side of 680th Avenue beginning one-quarter mile north of 310th Street and continuing to the south approximately 1.25 miles.¹⁰⁷

108. Steel pipelines which are buried in the earth must be protected from corrosion. This is typically accomplished by applying a protective coating on the pipe and using a cathodic protection system. The NNG pipeline along 680th Street utilizes an epoxy coating and a direct current (“DC”) impressed voltage cathodic protection system. The system typically operates at less than two volts. When an alternating current (“AC”) transmission line is installed near a steel pipeline, the transmission line can induce a small voltage on the pipeline that can interfere with the pipeline’s cathodic protection system and cause corrosion.¹⁰⁸

109. Xcel Energy commissioned an AC interference study to understand the interactions between the pipeline and transmission line so that the possibility of these situations can be eliminated. The study results conclude that separating the transmission line and natural gas pipeline by at least 42 feet and taking several corrective measures will greatly reduce potential interference and shock potential. These measures include installing a lower impedance shield wire between Dodge Mower Road and the Pleasant Valley Substation, installing proper grounding at the pipeline valve station or pipeline, and adjusting pole placement near the pipeline. Xcel Energy estimated the cost of these measures to be less than \$50,000.¹⁰⁹

110. The initial OES analysis of safety regarding the proximity of the NNG pipeline stated:

¹⁰⁶ FEIS, at 48.

¹⁰⁷ Ex. 7 at 4 (Stevenson Direct), as amended by errata eDockets Document No. 201011-56615-06.

¹⁰⁸ Ex. 7 at 5 (Stevenson Direct).

¹⁰⁹ Ex. 7 at 5 (Stevenson Direct); Ex. 4, Attachment 1 (Xcel Energy DEIS Comment Letter).

Although low in probability, a simultaneous leak on a pipeline and fault on the transmission line could result in ignition if the Project is not located at a minimum safe distance from natural gas pipelines. The National Association of Corrosion Engineers (NACE) develops standards to ensure pipeline safety and integrity. The NACE standards do not specify a safe separation distance between a pipeline and transmission line, but require analysis to determine the safe separation distance. In Canada, the separation distance between a pipeline and transmission line must be 10 meters (approximately 30 feet) or greater. The 10-meter separation would prevent arcing from the transmission line to the pipeline. Depending on the fault current level, the soil resistivity in the area of the fault, and mitigation measures, a pipeline and transmission line could potentially be located within less than 10 meters of each other and comply with all NACE standards. The 400-foot route width would allow for flexibility in transmission line alignment and ROW placement to avoid interference with existing natural gas lines.¹¹⁰

111. Xcel Energy disputed the DEIS finding regarding pipeline safety, contending that:

Xcel Energy would like to emphasize that the possibility of this type of ignition situation is extremely uncommon due to the safety mechanism installed on the pipeline to prevent leaks and on the transmission line to prevent faults. In the rare event that a pipeline leak goes undetected, a transmission line is not a likely source of ignition. Xcel Energy requests that this section of the DEIS be revised to state that an undetected pipeline leak is very rare and that a transmission line is not a likely source of ignition.¹¹¹

112. OES noted that pipelines are equipped with safety mechanisms to prevent leaks. OES acknowledged that the possibility of a simultaneous gas leak and line fault was “extremely low in probability,” but noted that “Ignition could also occur if natural gas is released from a pressure relief valve located at a pipeline compressor station.”¹¹²

113. The potential for interference or an accident involving the NNG pipeline only arises if the Preferred Route is selected. There is no possibility of any interaction if either Route Alternative 3 or the Alternate Route is selected. If the Preferred Route is selected, route width flexibility should be provided to allow for a safe distance between the HVTL and the pipeline and the permit should be conditioned upon implementation of the protective measures identified by Xcel Energy to address the potential for adverse interactions with the pipeline.

¹¹⁰ Ex. E, at 46 (DEIS).

¹¹¹ Xcel Energy DEIS Comment Letter (October 26, 2010) eDockets Document No. 201010-55882-01.

¹¹² FEIS, at 46.

C. Effects on Land Based Economies

114. Minnesota high voltage transmission line routing criteria require consideration of the proposed route's impacts to land based economies, specifically agriculture, forestry, tourism, and mining.¹¹³

115. The Project will result in permanent and temporary impacts to farmland. Working from an estimated foundation diameter of eight feet, Xcel Energy suggested that each Project structure (pole) would displace up to approximately 50 square feet of soil. Estimating that the poles would be placed at an average distance of 400 feet apart, long-term loss of farmland was calculated to be up to 0.28 acres for the Preferred Route and the Alternative Route, and up to 0.25 acres for Route Alternative 3.¹¹⁴

116. Temporary impacts during construction may include soil compaction, disruption of agricultural practices (e.g., center pivot irrigation or drain tile) and crop damage within the right-of-way.¹¹⁵

117. Prime farmland is located along all three routes, along with ditches and other noncultivated farmland. Within the proposed rights-of-way, Route Alternative 3 has 93 acres of prime farmland, compared to 116 acres for the Preferred Route and 121 acres for the Alternate Route.¹¹⁶

118. Xcel Energy intends to limit springtime construction to the extent possible to minimize agricultural impacts. If construction is necessary during the springtime, Xcel Energy has proposed minimizing disturbance by using the shortest access location and possibly constructing temporary driveways where necessary to limit traffic on fields.¹¹⁷

119. The only identified tourism site in the Project Area is Tweite's Pumpkin Patch, located along the Preferred Route, south of the intersection of U.S. Highway 14 and 280th Avenue. This business is open to the public six weeks a year (September through October 31) and includes corn mazes, pumpkin patches and other agri-tourism amusement activities. At other times, the premises are open for private events. In 2009, approximately 30,000 people attended events on the premises.¹¹⁸

120. Xcel Energy maintained that the placement of structures associated with the Preferred Route on the west side of 19th Avenue would eliminate Project structures on the Tweite's Pumpkin Patch property. There was no assessment of the aesthetic impact of the line running adjacent to that property. Route Alternative 3 and the

¹¹³ Minn. Stat. § 216E.03, subd. 7(b)(5); Minn. R. 7850.4100(C).

¹¹⁴ Ex. E, at 85 (DEIS).

¹¹⁵ Ex. 1 at 69 (Application).

¹¹⁶ Ex. E at S-8 and Table 6.3.3-3 (DEIS); Ex. 1 at 69 (Application).

¹¹⁷ Ex. E, at 88 (DEIS); Ex. 1, at 71 (Application).

¹¹⁸ Ex. E, at 85-88 (DEIS); Ex. 1, at 71-72 (Application).

Alternate Route would avoid Tweite's Pumpkin Patch altogether and are not located near any other tourist attractions.¹¹⁹

121. There will be no significant impact on tourism if the Project is constructed along Route Alternative 3 or the Alternate Route. There will be an aesthetic impact on Tweite's Pumpkin Patch if the Project is constructed along the Preferred Route, even if Xcel Energy's proposed placement of poles on the west side of 19th Avenue is carried out.

122. No forestry resource impacts other than removal of individual trees have been identified along any of the routes under consideration in this proceeding.¹²⁰ No impacts on mining resources are expected as Xcel Energy has proposed to avoid gravel pits, rock quarries, and commercial aggregate sources during detailed design of the transmission line.¹²¹

123. The record demonstrates that Route Alternative 3 has the least impact on land-based economies when compared to the Preferred Route and the Alternate Route.

D. Effects on Archaeological and Historic Resources

124. Minnesota high voltage transmission line routing criteria require consideration of the proposed route's effect on archaeological and historic resources.¹²²

125. The Study Area was evaluated in a records search and review of existing records contained at the Minnesota State Historic Preservation Office (SHPO) conducted in 2008 by 10,000 Lakes Archaeology, Inc. The records search was conducted to determine if significant archaeological, architectural, or tribal resources have been documented within the Study Area. Both archaeological and historic sites were documented within 0.5 miles of each of the Route Alternatives.¹²³

126. The records search of existing cultural resources identified three previously recorded archaeological sites and nine historic structures within 0.5 mile of the Preferred Route.¹²⁴

127. The records search of existing cultural resources identified one previously recorded archaeological site and three historic structures within 0.5 mile of the Alternate

¹¹⁹ FEIS, at 88.

¹²⁰ FEIS, at 88.

¹²¹ FEIS, at 90.

¹²² Minn. Stat. § 216E.03, subd. 7(b)(1); Minn. R. 7850.4100(D).

¹²³ FEIS, at 37.

¹²⁴ FEIS, at 37.

Route. Two non-registered historic structures were identified within 0.5 mile of the Alternate Route.¹²⁵

128. The records search of existing cultural resources identified two previously recorded archaeological sites and three historic structures within 0.5 mile of Route Alternative 3. One non-registered historic structure was identified within 0.5 mile of Route Alternative 3.¹²⁶

129. Xcel Energy committed that, if an artifact is discovered during construction, consultation would be conducted with the SHPO to determine whether or not the resource would be eligible for listing in the National Registry of Historic Places (NRHP). Phase I or Phase II surveys would be conducted in the event that a potentially eligible artifact is discovered and cannot be spanned.¹²⁷

130. It is appropriate for the Commission to condition a permit on any archaeological sites identified by investigation or during Project construction, being avoided through flexibility in siting of the Project structures and right-of-way. Where a discovered site cannot be avoided, such a site should be evaluated for significance and potential listing, and subsequent mitigation performed as needed. Potential visual impacts to the viewshed to/from historic sites should be reduced through coordinating pole placement with the land owner(s) and other interested parties.¹²⁸

131. The record demonstrates that there are fewer archaeological and historic sites within the Route Alternative 3 and the Alternate Route. More such impacts exist within the Preferred Route.

E. Effects on Natural Environment

132. Minnesota high voltage transmission line routing criteria require consideration of the proposed route's effect on the natural environment, including effects on air and water quality resources, flora, and fauna.¹²⁹

1. Air Quality

133. Construction of the Project will result in temporary air quality impacts caused by, among other things, construction-vehicle emissions and fugitive dust from right-of-way clearing.¹³⁰

¹²⁵ FEIS, at 38.

¹²⁶ FEIS, at 38-39.

¹²⁷ Ex. 1, at 74 (Application).

¹²⁸ FEIS, at 74.

¹²⁹ Minn. Stat. §§ 216E.03, subd. 7(b)(1) and (2); Minn. R. 7850.4100(E).

¹³⁰ FEIS, at S-6.

134. Xcel Energy will implement the appropriate dust control and vehicle idling measures during construction.¹³¹

135. The operation of the Project along any of the three Routes is not anticipated to cause any long-term impacts to air quality.¹³²

2. Water Quality and Resources

136. Water resources in the Project area include surface waters, groundwater, and floodplains.¹³³

137. Public Water Inventory (“PWI”) rivers and streams within or adjacent to the Route Alternatives are shown in Table 6.2.3-1 and Figure 7 in the FEIS. At 10 crossings, Route Alternative 3 has more river and stream crossings than the Preferred Route or the Alternate Route, which have eight and seven crossings, respectively. The Salem Creek crossing for the Preferred Route or Route Alternative 3 would follow existing rights-of-way, the Alternate Route would require a new crossing of Salem Creek in a previously undisturbed area.¹³⁴

138. Should pole placement occur within a water basin (e.g., lakes and ponds) or watercourse (e.g., rivers and streams), temporary direct impacts could include soil erosion along the shoreline and sedimentation caused by construction. The deposition of sediment could result in a long-term impact to water turbidity. Xcel Energy designed the Project to span surface water bodies in order to avoid such impacts. Indirect impacts are expected and will be avoided and minimized using the appropriate construction practices.¹³⁵

139. Using the National Wetlands Inventory, OES analyzed the impact on forested wetlands as follows:

Acreage of wetlands that would be crossed by the Project are similar for Route Alternatives 1 [Preferred Route] and 2 [Alternate Route], and include mostly emergent wetlands. Freshwater forested wetlands make up the second largest category of wetlands for Route Alternative 1, while scrub-shrub wetlands make up the second largest category of wetlands for Route Alternative 2. The ROW evaluated for Route Alternative 3 would cross 15.20 acres of wetlands, significantly higher than the acreage crossed by Route Alternatives 1 and 2, which ranges from 1.69 to 2.84 acres crossed. In addition, Route Alternative 3 would cross 4.56 acres of

¹³¹ *Id.*

¹³² FEIS, at 53.

¹³³ FEIS, at 55.

¹³⁴ FEIS, at 56.

¹³⁵ FEIS, at 59.

forested wetlands, compared to 0.55 acres of forested wetlands crossed by Route Alternative 1 and no forested wetlands crossed by Route Alternative 2. Acreage of wetlands crossed by Route Alternative 3 is greater due to the location of the route within open agricultural areas rather than along existing roadway ROW.¹³⁶

140. The Project could require a number of water and wetland-related permits, including coverage under the General Permit for Storm Water Discharges Associated with Construction Activities and associated Storm Water Pollution Prevention Plan ("SWPPP"), National Pollution Discharge Elimination System Permit ("NPDES"), License to Cross Public Waters, Public Waters Work Permit, and Section 404 Clean Water Act permit. The placement of transmission line pole structures, land clearing that involves soil disturbance, or placement of construction mats may be considered a discharge of fill material that would require a permit from the Department of the Army, pursuant to Section 404 of the Clean Water Act. These permits would require the Applicant to develop and implement Best Management Practices ("BMPs") for sediment and erosion control during construction and operation of the Project to protect topsoil and adjacent wetlands and surface water resources. Appropriate BMPs for the Project include:

- When possible, construction would be scheduled during frozen ground conditions;
- Crews would attempt to access a wetland with the least amount of physical impact to the wetland (i.e., shortest route);
- The structures would be assembled on upland areas before they were brought to the site for installation, when practical; and
- When construction during winter was not possible, construction mats would be used where wetlands would be affected.¹³⁷

141. The record demonstrates that there are fewer potentially affected water resources within the Preferred Route than within either the Alternate Route or Route Alternative 3. The difference in wetland acreage between the three routes is not significant, however, due to the nature of the land usage of Route Alternative 3 and the mitigative effect of pole placement outside of identified wetlands.

3. Flora

142. The Project Area is located in an area of southeastern Minnesota that consists of mixed upland prairie and burr oak savannah. This area is a borderland between the dry prairie landscape to the west and the driftless area to the east.

¹³⁶ FEIS, at 62-63.

¹³⁷ FEIS, at 64-65.

Approximately 90 percent of the Project Area is agricultural, used for hay crops, pastures, and row crops such as corn and soybeans.¹³⁸

143. The FEIS identified direct impacts from the Project as primarily the loss of individual plants through disturbance from construction or related right-of-way clearing, and ongoing losses of flora through disturbance from maintenance activities.¹³⁹

144. MnDNR expressed its overall assessment of impacts to the environment and specific effects on flora in the right-of-way, stating:

Considering route comparisons provided in the DEIS, Alternative 1 appears to have the least overall impact to natural resources. Specifically, Alternative 1 has the least effect on wetlands, the least tree removal at Salem Creek, and avoids a crossing of the South Fork Zumbro River Wildlife Management Area (WMA). Impacts to rare species were described in the DEIS as comparable, with the exception of potential impacts to the state and federally listed threatened Prairie Bush Clover along Alternative 1. Further consideration of rare species will be important for all routes, and particularly important for Alternative 1.

The DEIS Table 8-2 titled Summary of Potential Mitigation Measures includes the measure of surveying all likely habitat for Prairie Bush Clover, American Ginseng, and Valerian so that structure placement can be sited to avoid known occurrences. The DNR concurs with this recommendation for any of the routes considered. ...¹⁴⁰

145. As set out in the FEIS, minimizing long-term impacts to flora can be achieved by utilizing the following methods:

- Restoring the disturbed area to its original vegetative state to the extent possible throughout the Project right-of-way, lay down areas, access roads, and temporary work spaces.
- Limiting tree removal to only those trees located within the permitted right-of-way that would affect the safe operation of the transmission line.
- Washing or manually removing material from construction vehicles prior to the start of construction where that equipment has traveled from an area contaminated by noxious weeds.

¹³⁸ FEIS, at 65.

¹³⁹ FEIS, at 66.

¹⁴⁰ Ex. I (MnDNR Letter, November 9, 2010).

- Planting cover crops or other stabilizing vegetation (in nonagricultural areas) following construction to prevent disturbed areas from becoming available to weed species.¹⁴¹

146. Route Alternative 3 would cross the South Fork Zumbro River Wildlife Management Area (“WMA”) east of the 345 kV transmission line, near the narrow northeastern edge of the WMA. The 400-foot route width requested for Route Alternative 3 would allow for flexibility in placement of the transmission line and poles, such that impacts to the WMA could be reduced or avoided. The length of Route Alternative 3 that would cross the WMA would be 465 feet, which is less than the maximum distance between Project structures of 650 feet. Given the potential distance between structures, the WMA could be spanned and poles placed outside the WMA, thereby minimizing impact on flora in the WMA.¹⁴²

147. The right-of-way for Route Alternative 3 would overlap with existing right-of-way for the existing 345 kV transmission line, reducing to 35 feet the new right-of-way width required for Route Alternative 3. If the transmission line follows the proposed centerline of Route Alternative 3, additional right-of-way of 35 feet traversing a distance of 465 feet would result in approximately 0.37 acres of new right-of-way required through the WMA.¹⁴³

148. The Preferred Route would require tree removal at 10 residences. The Alternate Route would require tree removal at seven residences. Route Alternative 3 may not require any residential tree removal.¹⁴⁴

149. All three Route alternatives would require tree removal at Salem Creek and the transmission line would be visible to recreational users of the waterway. The Alternate Route would require the greatest amount of tree removal at this crossing. The Preferred Route requires removal of the fewest number of trees at Salem Creek.¹⁴⁵

150. The record demonstrates that the greatest impact upon flora would occur by utilizing the Alternate Route. The record is not clear regarding whether utilizing the Preferred Route or Route Alternative 3 results in the least impact upon flora. While the MnDNR assessed that the Preferred Route had the least impact, that conclusion was based on the amount of tree removal at the Salem Creek Crossing. As the record shows, greater tree removal for residences (and other privately-owned land) will occur using the Preferred Route. The MnDNR assessment is silent as to this loss of trees. In addition, the MnDNR noted the potential impact to the Prairie Bush Clover using the Preferred Route. Regardless of the ultimate level of impact on flora between the

¹⁴¹ FEIS, at 67.

¹⁴² FEIS, at 69.

¹⁴³ FEIS, at 68-69.

¹⁴⁴ FEIS, at 28.

¹⁴⁵ See FEIS at S-7 (Table S-1: Summary of Impacts and Comparison of Route Alternatives).

Preferred Route and Route Alternative 3, the difference does not appear significant due to the utilization of the overlapping right-of-way on Route Alternative 3.

4. Fauna

151. The Project would be located primarily along existing rights-of-way in a cultivated agricultural environment with patches of natural areas present. These natural areas include habitat such as grasslands, upland and lowland deciduous forests, emergent wetlands, and riparian woodlands.¹⁴⁶

152. These habitats provide forage, nesting, and breeding habitat for resident wildlife, as well as stopover habitat for migratory species. Resident species common to south-east Minnesota forests, wetlands, and grasslands include mammals such as mice, shrews, voles, white-tailed deer, and coyotes. Numerous songbird and waterfowl species are common as well as frogs, turtles, and snakes.¹⁴⁷

153. Throughout the Project area, there are several areas where high-quality wildlife habitat occurs naturally or is being managed, including the South Fork Zumbro River WMA, the Tri-cooperative WMA, and the Rock Dell WMA. Of these areas, only the South Fork Zumbro River WMA is crossed by a proposed route, Route Alternative 3.¹⁴⁸

154. There are no Scientific Natural Areas, National Wildlife Refuges or Waterfowl Production Areas located within 1 mile of the Project. The closest wildlife refuge is the Upper Mississippi River National Wildlife and Fish Refuge, located approximately 50 miles south of the Project.¹⁴⁹

155. Due to the similarity in length, impacts to terrestrial wildlife would be similar for all Route and Segment Alternatives. Construction noise and increased activity levels would temporarily limit the use of the habitat along the routes. The clearing of trees along the ROW could displace nesting or burrowing wildlife. Due to the availability of adjacent habitat, displacement of any species is expected to be short-term.¹⁵⁰

156. MnDNR expressed its overall assessment of impacts to fauna in the right-of-way, stating:

The DEIS states that wetlands and waterways could be spanned. Impacts to rare species would be minimized provided the transmission line spans

¹⁴⁶ FEIS, at 67.

¹⁴⁷ FEIS, at 67.

¹⁴⁸ FEIS, at 67.

¹⁴⁹ FEIS, at 68.

¹⁵⁰ FEIS, at 68.

waterways and wetlands. This would include floodplains, which are potential habitat for the Wood Turtle. Given the presence of rare species (Wood Turtle, Ellipse, Ozark Minnow) that are vulnerable to deterioration in water quality, especially increased siltation, it is important that effective erosion prevention and sediment control practices be implemented and maintained near the rivers and creeks. The DNR encourages continued project planning to span waterways, wetlands and floodplains as much as possible. If spanning these areas is not possible, then botanical and mussel surveys should be completed in all likely wetland and waterway rare species habitats.

Surveys for rare species are recommended prior to a routing decision. The DNR encourages coordination regarding rare species surveys as early as possible in the route permitting process to (1) provide the most robust comparison of rare species along routes during environmental review and permitting, and (2) plan appropriate scheduling for any needed rare species surveys (some mussel and botanical surveys may be required by the DNR) because survey scheduling may be dependent on species-specific timeframes.

The DNR recommends that the FEIS include a description of potential direct and indirect impacts specific to the South Fork Zumbro River WMA. Descriptions of site-specific potential impacts and potential mitigation measures for public lands are recommended for this project and in all applicable transmission line environmental review documents to help inform agency and public review and to inform the License to Cross Public Lands and Waters Permit.¹⁵¹

157. To ensure mitigation of possible impacts to wildlife, imposing conditions on the Permit to require Xcel Energy to span designated habitat or conservation areas wherever feasible is appropriate. In the event complete spanning is not possible, requiring Xcel Energy to minimize the number of structures placed in high quality wildlife habitat and to work with the MnDNR to determine appropriate mitigation is appropriate.

158. The evidence demonstrates that none of the three routes will have a significant impact on fauna.

F. Effects on Rare and Unique Natural Resources

159. Minnesota high voltage transmission line routing criteria require consideration of the proposed route's effect on rare and unique natural resources.¹⁵²

¹⁵¹ Ex. I (MnDNR Letter, November 9, 2010).

¹⁵² Minn. Stat. § 216E.03, subd. 7(b)(1); Minn. R. 7850.4100(F).

160. The FEIS prepared for this Project lists the species found within the Project Area that are threatened, endangered, or of special concern.¹⁵³ The species listed include those identified by the MnDNR in the discussion above regarding flora and fauna. The FEIS describes the route impact on these species as follows:

In general, potential impacts to sensitive species would be similar for all Route and Segment Alternatives. However, Route Alternative 1 would cross known occurrences of prairie bush clover, which are avoided by Route Alternatives 2 and 3.

As described in Section 6.2.4, Route Alternative 3 would cross more wetland acreage than Route Alternatives 1 and 2. As such, it has a greater potential to impact sensitive wetland species through construction and structure placement within wetlands.

Each of the three Route Alternatives would cross Salem Creek and adjacent wooded area surrounding the creek that provides suitable habitat for species. Route Alternative 1 would cross the shortest length of wooded area surrounding Salem Creek of the three Route Alternatives and could result in fewer impacts to sensitive species near Salem Creek.¹⁵⁴

161. Xcel Energy proposed to span, where possible, rivers, streams and wetlands, and any habitats where listed species have been recorded or are likely to occur. Wherever it is not feasible to span, a survey will be conducted to determine the presence of special status species or suitability of habitat for such species. Where the survey shows such species or habitat, Applicants will coordinate with MnDNR to avoid and minimize any impact.¹⁵⁵

162. The record demonstrates that there are equivalent impacts to threatened and endangered species within all three Route options, provided that Route Alternative 3 is aligned to span the South Fork Zumbro River WMA (without placement of poles within the WMA boundaries). The Preferred Route is the only option identified which would affect a listed specie, Prairie Bush Clover.

G. Application of Various Design Considerations

163. Minnesota high voltage transmission line routing criteria require consideration of applied design options for the Project that maximize energy

¹⁵³ FEIS, at 71.

¹⁵⁴ FEIS, at 72-73.

¹⁵⁵ FEIS, at 73; Ex. 1, at 84-88 (Application).

efficiencies, mitigate adverse environmental effects, and accommodate potential expansion of transmission or generating capacity.¹⁵⁶

164. As stated previously, the 161 kV transmission line is proposed to be constructed as a single circuit line using single-pole, weathering steel structures with brace post insulators. The height of the single circuit structures will range from 70 to 90 feet. The spans between structures will range from 400 to 650 feet with a right-of-way width of 80 feet.¹⁵⁷

165. The transmission line is designed to meet current and projected needs. In addition, both the Pleasant Valley Substation and Byron Substation were designed and constructed to accommodate future transmission line interconnections.¹⁵⁸

166. The design options of the facilities along all the Route options maximize energy efficiencies, mitigate adverse environmental effects, and accommodate future expansion.¹⁵⁹

H. Use or Paralleling of Existing Right-of-Way, Survey Lines, Natural Division Lines, and Agricultural Field Boundaries

167. Minnesota high voltage transmission line routing criteria require consideration of the proposed route's use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries.¹⁶⁰

168. The Preferred Route is within or adjacent to existing road and highway rights-of-way for approximately 96 percent of its length. The Alternate Route is within or adjacent to existing road and highway rights-of-way for approximately 88 percent of its length.¹⁶¹

169. Route Alternative 3 parallels the existing Pleasant Valley–Byron 345 kV transmission line rights-of-way for nearly 100 percent of its length.¹⁶²

170. The record demonstrates that Route Alternative 3 maximizes the use of parallel existing rights-of-way for electrical lines.

¹⁵⁶ Minn. Stat. §§ 216E.03, subd. 7(b)(3) and (10); Minn. R. 7850.4100(G).

¹⁵⁷ Ex. 1, at 37 (Application).

¹⁵⁸ *Id.* at 36.

¹⁵⁹ Ex. 2 at pp. 3-5, 3-6 (Application).

¹⁶⁰ Minn. Stat. § 216E.03, subd. 7(b)(9); Minn. R. 7850.4100(H).

¹⁶¹ Ex. 1, at 5, 7 (Application).

¹⁶² FEIS, at 18.

I. Use of Existing Transportation, Pipeline, and Electrical Transmission System Rights-of-Way

171. Minnesota high voltage transmission line routing criteria require consideration of the proposed route's use of existing transportation, pipeline, and electrical transmission system rights-of-way.¹⁶³

172. As discussed in the foregoing Findings, the Preferred Route, Alternate Route, and Route Alternative 3 have all been proposed within existing right-of-way. Route Alternative 3 makes the greatest use of existing high voltage transmission line right-of-way and minimizes the new right-of-way width required to 35 feet beyond the existing right-of-way.

J. Electrical System Reliability

173. Minnesota high voltage transmission line routing criteria require consideration of the Project's impact on electrical system reliability.¹⁶⁴

174. Xcel Energy contended that, when compared to the Alternate Route or Route Alternative 3, the Preferred Route would provide the greatest separation between the existing 345 kV transmission line and the proposed 161 kV transmission line. This separation, Xcel Energy argues, makes the Preferred Route slightly more reliable than the other two because it is less likely that a single event could cause both lines to fail.¹⁶⁵

175. All three Route alternatives satisfy the applicable North American Electric Reliability Corporation ("NERC") criteria and meet the Project need of providing additional generation outlet.¹⁶⁶ In addition, the primary purpose of the proposed 161 kV line is for generation outlet rather than system or regional reliability.¹⁶⁷

176. OES carefully analyzed the issue of reliability in the FEIS. On that issue, the FEIS states:

The Applicant has expressed reliability concerns over co-locating the Project's 161 kV transmission line with the existing 345 kV transmission line on overlapping ROW. The existing 345 kV transmission line serves multiple functions, including local load serving, regional power transfer, and providing generation outlet capacity from the Pleasant Valley Substation (Standing, 2010). The stated need of the Project is to provide

¹⁶³ Minn. Stat. § 216E.03, subd. 7(b)(8); Minn. R. 7850.4100(J).

¹⁶⁴ Minn. Stat. § 216E.03, subd. 7(b)(10); Minn. R. 7850.4100(K).

¹⁶⁵ Ex. 6, at 9 (Standing Direct).

¹⁶⁶ Byron Evidentiary Hearing Transcript at 36.

¹⁶⁷ Byron Evidentiary Hearing Transcript at 28.

generator outlet from the Pleasant Valley Substation Area, specifically from the Grand Meadow and Wapsipinicon Wind Farms and future generators. Although both the Project transmission line and existing 345 kV line would provide generation outlet capacity from the Pleasant Valley Substation, the Project was proposed to interconnect the two wind farms and was not proposed to provide reliability or redundancy to the existing 345 kV transmission line. Further, the Project's 161 kV transmission line alone would not be able to physically serve as full back-up of the 345 kV transmission line if the 345 kV transmission line segment between the Pleasant Valley and Byron Substations is lost. The Project could assist in handling a loss of the 345 kV segment, but could not fully carry the current from the 345 kV transmission line without some loss of load or generation re-dispatch. As such, the Project would not be a redundant substitute to the existing 345 kV transmission line and co-location of the transmission lines on overlapping ROW would not violate any NERC Reliability Standards. Additionally, due to the distance between the transmission line structures under the feasible ROW evaluated for Route Alternative 3, a pole from either the Project or existing 345 kV transmission line would have a greater than 180 degree fall angle. This would reduce the probability of one pole falling and taking out a pole associated with the other transmission line.

It should be noted that single contingency events with the potential to disrupt service on both lines are not limited to pole collapse. The Applicant has stated that lightning strikes or wind blown debris are more likely causes of outage events (Standing, 2010). However, the Applicant has been unable to provide recent examples of such events occurring or the probability of a single contingency event occurring for the Project. The Project would be designed to meet or exceed the requirements of NESC, including withstanding wind and other extreme weather conditions. In the past five years, none of the Applicant's steel poles in Minnesota have failed due to tornados or other weather; two of the Applicant's 10,350 structures failed during a tornado in Colorado. In Minnesota, an F3 tornado with wind speeds of up to 150-200 miles per hour passed through the Hugo, Minnesota area, but the wood pole structures and conductors did not fall (Gallay, 2010). Under the feasible alignment evaluated for Route Alternative 3, the distance between the Project conductors and existing 345 kV transmission line conductors would be 36 feet. Placement of the Project 161 kV transmission line on separate structures and overlapping ROW with the existing 345 kV transmission line would not violate NERC Standard TPL-003-0a (Category C).¹⁶⁸

¹⁶⁸ FEIS, at 19.

177. The record demonstrates the each of the three routes will support the reliable operation of the electrical transmission system.

K. Costs of Constructing, Operating, and Maintaining the Facility

178. Minnesota high voltage transmission line routing criteria require consideration of the each proposed route's cost of construction, operation, and maintenance.¹⁶⁹

179. The Preferred Route and its Associated Facilities will cost \$10.5 million to construct. The Alternate Route and its Associated Facilities will cost \$10.9 million to construct. Route Alternative 3 will cost \$9.7 million to construct.¹⁷⁰ Operational and maintenance costs of between \$300 to \$500 per mile will be equivalent for all the route options.¹⁷¹

180. The record demonstrates that it will cost less to construct the Route Alternative 3 than the Preferred or Alternate Route and their respective Associated Facilities.

L. Adverse Human and Natural Environmental Effects Which Cannot be Avoided

181. Minnesota high voltage transmission line routing criteria require consideration of the adverse human and natural environmental effects that cannot be avoided for each proposed route.¹⁷²

182. Unavoidable adverse impacts include the physical impacts to the primarily agricultural land, due to the construction of the Project.¹⁷³

183. Xcel Energy identified mitigation measures to address adverse environmental effects during construction of the Project and committed to working with public agencies to minimize the unavoidable adverse environmental effects that may arise during construction of the Project.¹⁷⁴

¹⁶⁹ Minn. R. 7850.4100(L).

¹⁷⁰ Xcel Energy Cost Letter (November 5, 2010) eDockets No. 201011-56267-01.

¹⁷¹ Ex. 1, at 47 (Application).

¹⁷² Minn. Stat. § 216E.03, subd. 7(b)(5) and (6); Minn. R. 7850.4100(M).

¹⁷³ Ex. 1 at 91 (Application).

¹⁷⁴ Ex. 1 at 57-84 (Application).

184. Approximately 0.28 acres of permanent agricultural land impacts are anticipated for the Preferred Route or the Alternate Route.¹⁷⁵

¹⁷⁵ FEIS, at 89.

185. Approximately 0.25 acres of permanent agricultural land impacts are anticipated for Route Alternative 3.¹⁷⁶

186. The least impact through unavoidable adverse human and natural environmental effects is achieved through the use of Route Alternative 3.

M. Irreversible and Irretrievable Commitments of Resources

187. Minnesota high voltage transmission line routing criteria require consideration of the irreversible and irretrievable commitments of resources that are necessary for each proposed route.¹⁷⁷

188. Only construction resources, such as concrete, steel, and hydrocarbon fuels, will be irreversibly and irretrievably committed to this Project. The impacts are similar in extent for the Preferred Route and the Alternate Route.¹⁷⁸

189. The commitment of these resources is slightly less, due to the shorter distance of the route, for Route Alternative 3 when compared to the Preferred Route or the Alternate Route.

N. Consideration of Issues Presented by State and Federal Agencies

190. Minnesota high voltage transmission line routing criteria allows for the consideration of problems raised by state and federal agencies when appropriate.¹⁷⁹

191. Mn/DOT, MnDNR, and OES expressed concern with various aspects of the Preferred Route. In each instance, these concerns are set out and analyzed in the foregoing Findings.

O. Evaluation of Alternatives

192. Minnesota high voltage transmission line routing criteria allows for the consideration of alternatives to the proposed route.¹⁸⁰

193. The three route options, the crossover route, and three segment alternatives were studied by the OES in the draft EIS.¹⁸¹

¹⁷⁶ *Id.*

¹⁷⁷ Minn. Stat. § 216E.03, subd. 7(b)(11); Minn. R. 7850.4100(N).

¹⁷⁸ Ex. 1 at p. 92 (Application).

¹⁷⁹ Minn. Stat. § 216E.03, subd. 7(b)(12).

¹⁸⁰ Minn. Stat. § 216E.03, subd. 7(b)(7).

¹⁸¹ Ex. E, at § 5 (DEIS).

194. Generally speaking, the segment alternatives are suitable for addressing specific adverse impacts in the event of the selection of either the Preferred or the Alternate Route. In each case, the benefit to be obtained from those segment alternatives is less than the selection of Route Alternative 3 in its entirety.

II. Route Width Flexibility

195. The PPSA directs the Commission to locate transmission lines in a manner that “minimize[s] adverse human and environmental impact while ensuring continuing electric power system reliability and integrity and ensuring that electric energy needs are met and fulfilled in an orderly and timely fashion.”¹⁸²

196. The PPSA further authorizes the Commission to meet its routing responsibility by designating a “route” with a “variable width of up to 1.25 miles.”¹⁸³

197. Xcel Energy requested a route width of 400 feet for the 161 kV transmission line, and a 1,000-foot route width would extend 500 feet on either side of buildings within an industrial area located south of the Byron Substation.¹⁸⁴

198. Subsequently, Xcel Energy also requested additional route width up to 1,100 feet on the west side of the Route Alternative 1 for a one half mile segment west of 680th Avenue where the Preferred Route crosses the North Branch Root River. This additional width is requested to address the potential to double circuit the HVTL with a proposed 138 kV line.¹⁸⁵

199. The proposed route width is consistent with prior Route Permits issued by the Commission.¹⁸⁶

200. The landowner at the potentially double circuited location supported the wider route width, should the Preferred Route be chosen by the Commission.¹⁸⁷

201. Applicants’ request for a route width of 400 feet, and where necessary up to 1,000 feet for a limited portion of the Preferred Route, is consistent with the PPSA

¹⁸² Minn. Stat. § 216E.02, subd. 1.

¹⁸³ Minn. Stat. § 216E.02, subd. 1.

¹⁸⁴ Ex. 1, at 8, Appendix A, Figure A-4 (Application)(denoted “Wider Route Area”).

¹⁸⁵ Ex. 7, Schedule 2 (Stevenson Direct).

¹⁸⁶ See *In the Matter of the Application for a HVTL Route Permit for the Badoura Transmission Line Project*, Docket No. ET-2, ET015/TL-07-76 Findings of Fact, Conclusions of Law and Order Issuing A Route Permit to Minnesota Power and Great River Energy For the Badoura Transmission Line Project And Associated Facilities (Oct. 31, 2007).

¹⁸⁷ Byron Evidentiary Hearing Transcript at 21-24 (Gronseth).

and appropriate given the circumstances of this Project to allow coordination with landowners, state, and federal agencies to develop a final alignment and design.¹⁸⁸

202. Xcel Energy's request for a 400 foot-wide route width, including an area where a width of 1,100 feet is necessary for the Preferred Route, is consistent with the PPSA.¹⁸⁹

III. Notice

203. Minnesota statute and rules require Xcel Energy to provide certain notice to the public and local governments before and during the Application for a Route Permit process.¹⁹⁰

204. As set out in the Procedural Summary in this Report, Xcel Energy provided notice to the public and local governments in satisfaction of Minnesota statutory and rule requirements.¹⁹¹

205. Minnesota statutes and rules also require OES to provide certain notice to the public throughout the Route Permit process.¹⁹² As set out in the Procedural Summary in this Report, OES provided this notice in satisfaction of Minnesota statutes and rules.

IV. Adequacy of FEIS

206. The Commission is required to determine the adequacy of the FEIS.¹⁹³ An FEIS is adequate if it: (A) addresses the issues and alternatives raised in scoping to a reasonable extent considering the availability of information and the time limitations for considering the permit application; (B) provides responses to the timely substantive comments received during the DEIS review process; and (C) was prepared in compliance with the procedures in Minn. R. 7850.1000 to 7850.5600.¹⁹⁴

207. The record demonstrates that the FEIS is adequate because it addresses the issues and alternatives raised in the Scoping Decision, provides responses to the substantive comments received during the DEIS review process, and was prepared in compliance with Minn. R. 7850.1000 to 7850.5600.

¹⁸⁸ Minn. Stat. § 216E.02, subd. 1.

¹⁸⁹ *Id.*

¹⁹⁰ Minn. Stat. § 216E.03, subd. 3a; Minn. Stat. § 216E.03, subd. 4; Minn. R. 7850.2100, subp. 2; Minn. R. 7850.2100, subp. 4.

¹⁹¹ *See generally* Ex. 2..

¹⁹² Minn. Stat. § 216E.03, subd. 6; Minn. R. 7850.2300, subp. 2; Minn. R. 7850.2500, subp. 2; Minn. R. 7850.2500, subp. 7; Minn. R. 7850.2500, subp. 8; and Minn. R. 7850.2500, subp. 9.

¹⁹³ Minn. R. 7850.2500, subp. 10.

¹⁹⁴ *Id.*

CONCLUSIONS

1. The Public Utilities Commission and Administrative Law Judge have jurisdiction to consider Applicant's Application for a Route Permit.¹⁹⁵

2. The Commission determined that the Application was substantially complete and accepted the Application on February 9, 2010.

3. OES has conducted an appropriate environmental analysis of the Project for purposes of this route permit proceeding and the FEIS satisfies Minn. R. 7850.2500. Specifically, the FEIS addresses the issues and alternatives raised through the scoping process in light of the availability of information and the time limitations for considering the permit application, provides responses to the timely substantive comments received during the DEIS review process, and was prepared in compliance with the procedures in Minn. R. 7850.1000-7850.5600.

4. Applicants gave notice as required by Minn. Stat. § 216E.03, subd. 3a; Minn. Stat. § 216E.03, subd. 4; Minn. R. 7850.2100, subp. 2; and Minn. R. 7850.2100, subp. 4.

5. OES gave notice as required by Minn. Stat. § 216E.03, subd. 6; Minn. R. 7850.2300, subp. 2; Minn. R. 7850.2500, subp. 2; Minn. R. 7850.2500, subp. 7; Minn. R. 7850.2500, subp. 8; and Minn. R. 7850.2500, subp. 9.

6. Public hearings were conducted in a community located along the proposed high voltage transmission line routes. Xcel Energy and OES gave proper notice of the public hearings, and the public was given the opportunity to speak at the hearings and to submit written comments. All procedural requirements for the Route Permit were satisfied.

7. The record demonstrates that Route Alternative 3, and its Associated Facilities, satisfies the route permit criteria set forth in Minn. Stat. § 216E.03, subd. 7 and Minn. R. 7850.4100.

8. The record establishes that the Preferred and Alternate Routes also satisfy the route permit criteria set forth in Minn. Stat. § 216E.03, subd. 7 and Minn. R. 7850.4100.

9. The record demonstrates that Route Alternative 3 is the best alternative for the 161 kV transmission line between the Pleasant Valley Substation and the Byron Substation.

10. The record demonstrates that it is appropriate to grant a Route Permit for the 161 kV transmission line, and Associated Facilities, along Route Alternative 3.

¹⁹⁵ Minn. Stat. §§ 14.57-.62 and 216E.02, subd. 2.

11. The record demonstrates that it is appropriate for the Route Permit to provide the requested route width of 400 feet with a route width of 1,000 feet requested immediately south of the Byron Substation. In the event that the Commission selects the Preferred Route, it is appropriate for the Route Permit to additionally provide the requested route width of 1,100 feet where the overlap of natural gas pipeline and potentially double circuited HVTL occurs.

12. It is appropriate for the Route Permit to require Applicant to obtain all required local, state, and federal permits and licenses, to comply with the terms of those permits or licenses, and to comply with all applicable rules and regulations.

13. Any Findings more properly designated Conclusions are incorporated herein by reference.

THIS REPORT IS NOT AN ORDER AND NO AUTHORITY IS GRANTED HEREIN. THE MINNESOTA PUBLIC UTILITIES COMMISSION WILL ISSUE THE ORDER WHICH MAY ADOPT OR DIFFER FROM THE FOLLOWING RECOMMENDATION.

Based on the Findings of Fact, Conclusions, and the entire record herein, the Administrative Law Judge makes the Recommendations set forth above in this Report.

Dated: January 7, 2011

s/Manuel J. Cervantes

MANUEL J. CERVANTES
Administrative Law Judge

Recorded: Janet Shaddix and Associates
Transcripts Prepared

NOTICE

Under the PUC's Rules of Practice and Procedure, Minn. R. 7829.0100 to 7829.3200, exceptions to this Report, if any, by any party adversely affected must be filed within 15 days of the mailing date hereof with the Executive Secretary of the PUC, 350 Metro Square Building, 121 Seventh Place East, St. Paul, Minnesota 55101-2147. Exceptions must be specific, relevant to the matters at issue in this proceeding, and stated and numbered separately. Proposed Findings of Fact, Conclusions, and Order should be included, and copies thereof served upon all parties.

The PUC shall make its determination on the applications for the Certificate of Need and Route Permits after expiration of the period to file Exceptions as set forth above, or after oral argument, if such is requested and had in this matter. In accordance with Minn. R. 4400.1900, the PUC shall make a final decision on the Route Permits within 60 days after receipt of this Report.

Notice is hereby given that the PUC may accept, modify, condition, or reject this Report of the Administrative Law Judge and that this Report has no legal effect unless expressly adopted by the PUC.

SUMMARY OF TESTIMONY

Oral Testimony at the Public Hearings

Over 60 people attended the two public hearings held in Byron, Minnesota regarding the Project. Both hearings were held on October 26, 2010. This summarizes many of the significant comments offered during the public hearings. The ALJ has not reproduced the comments in their entirety, as much of the testimony offered was similar in substance and often recited information from other sources such as the DEIS which was analyzed in the Findings above. The ALJ has carefully considered all the comments, whether oral or written.

Michael Madery, a resident of Dodge County along the Preferred Route, noted that the Charles Van Allen house and homestead, a historic site, is located across County Road 15 from his residence. Mr. Madery further noted that the DEIS described the proposed Route Alternative 3 as positioned sufficiently far from the existing 345 kV line to preclude one line falling into the other. In his view, the positioning meets any need for the new line to provide reliability or redundancy to the existing 345 kV line. Mr. Madery also noted that the positioning of Route Alternative 3 could be performed within the existing right-of-way that the utility already owns.

Mr. Madery also expressed his concern with stray voltage, noting that the Preferred Route would run over his farm where he has a well and raises animals. Mr. Madery indicated that the presence of stray voltage could affect the productivity of his farm animals. He also expressed concern over the potential adverse effect to his own health, regardless of whether recommended the EMF levels are adhered to.

Mr. Madery supported adoption of Route Alternative 3, stating :

Alternative route three is the shortest route. It disturbs the fewest acres of prime farmland. It has the least impact on aesthetics and tree removal in the area. It has the least impact for safety and health to humans and animals. It has the fewest residents within 300 feet of the right-of-way. It has fewer residential property value impacts. It's definitely, when this line runs in front of our place, going to reduce the value of my property.

And I couldn't read anywhere in the impact statement concerning cost, but it has to be the least expensive route. And for those reasons, I support route alternative number three.¹⁹⁶

Jared Snyder described property that he is clearing on 675th Street along the Preferred Route. Mr. Snyder intends to build a residence on that property. He noted that there are other lots that are slated for residential construction that would be adjacent to the Preferred Route (Segment A) at Highway 14 near the Olmsted County border. The proposal to route the HVTL along the Preferred Route would, in Mr. Snyder's opinion, render the land worthless.¹⁹⁷

Arlin Scharberg, a resident of Rock Dell Township in Olmsted County, described his experience with stray voltage when working in his farm field underneath the existing 345 kV line, stating:

When I drive my old John Deere underneath the lines, there's no cab on it or nothing, the old tractor, and if I'm not careful, the three spokes in the steering wheel are hot. I get a shock. So there's stray voltage coming through those lines when I'm right underneath the lines. I can prove it because anytime you go out, I drive 100 feet away, and it's fine.

Mr. Scharberg expressed concern that, if Route Alternative 3 is selected, he will experience more problems with stray voltage. He suggested that it would be more appropriate to distribute the impact around the community. Mr. Scharberg supported routing the HVTL along the Preferred Route.¹⁹⁸

Todd Humphrey expressed his support for Route Alternative 3 as having the least impact on residents as assessed in the DEIS. He suggested that the costs for that alternative could not be significantly higher than the costs for the Preferred Route or the Alternate Route, particularly when the costs are amortized over the anticipated useful life of the transmission line. Mr. Humphrey expressed his opinion that Xcel Energy had not shown any substantial probability that two poles (on different lines) could be destroyed in a single incident. He noted that his farm would have a pole installed if the Preferred Route were to be chosen and that the impact on the use and value of his property was not discussed in the DEIS.

Mr. Humphrey urged consideration of the aesthetic impact of the proposed line on rural residents, who have chosen to live "in the middle of nowhere, if you will." These residents have chosen to live apart from busy roads and do not desire to have utilities located there.

¹⁹⁶ Byron Afternoon Public Hearing Transcript at 16-19.

¹⁹⁷ Byron Afternoon Public Hearing Transcript at 20-24.

¹⁹⁸ Byron Afternoon Public Hearing Transcript at 24-30.

Mr. Humphrey noted that the Preferred Route is proposed to run alongside 650th Street which is often not plowed after winter storms for up to two days. In the event of an outage during a winter storm, there could be difficulty in getting equipment into the area to repair the line.

Regarding effects on land-based economies, Mr. Humphries noted that he rents out farmland that would be affected by the Preferred Route. Poles sited on that land would decrease the value of that land both from a rental standpoint, and as a future building site.

As to effects on the natural environment, Mr. Humphrey urged that potential impact of the Preferred Route on the wetland at Highway 14 on Dodge County Line Road be considered. This wetland is near Tweite's Pumpkin Patch. He also objected to a portion of woods being removed along the Preferred Route, near the north half of County Line Road.

Mr. Humphrey suggested that either the Alternate Route or Route Alternative 3 would result in greater energy efficiencies through design options. In addition, Route Alternative 3 would use parallel power line right-of-way to the greatest extent. He suggested that residents would not be affected to any greater extent since there is already an HVTL there.¹⁹⁹

Timothy Horvei, a resident near the Pleasant Valley portion of the route, expressed concern over the potential impact of an HVTL to the property, lives, and wellbeing of persons living along the line. He urged adoption of Route Alternative 3 as the "straightest line between two points." He noted that the Preferred Route and the Alternate Route each affected more residences and, due to their longer lengths, "would have a greater impact on the environment, on people, on everything else."

Mr. Horvei contended that Xcel Energy's need for redundancy would be met by using separate structures along Route Alternative 3. He asked what information Xcel Energy was relying on in drawing its conclusions on redundancy. He expressed his opinion that the odds of an event affecting both lines at the same time were "slim." Mr. Horvei also pointed out that the Preferred Route posed a risk through running the HVTL over a high pressure natural gas line. He urged that costs not be put before people.²⁰⁰

Kendall Boyum, a property owner along the Preferred Route, suggested that Xcel Energy was motivated by lower costs arising from having road access for construction, maintenance, and repair of the transmission line. Mr. Boyum supported the use of Route Alternative 3 for the line.²⁰¹

¹⁹⁹ Byron Evening Public Hearing Transcript at 15-21.

²⁰⁰ Byron Evening Public Hearing Transcript at 22-29, 61-66.

²⁰¹ Byron Evening Public Hearing Transcript at 30-34.

Jerry Holecek objected to the Preferred Route as the worst of the three routes, based on the number of residences and historic sites affected, acreage of farmland lost, and the presence of the natural gas line. He also noted that the Preferred Route could result in limitations to the proposed road interchange at Highway 14 and 280th Avenue. He supported use of Route Alternative 3.²⁰²

Bruce Ludwig questioned why Xcel Energy could not run the Preferred Route to the west side of County Road 15 and connect up at 660th. Mr. Ludwig noted that People's Power Cooperative Power has an existing line at that location. He indicated that the DEIS incorrectly identified one location as 665th Street, when the actual location is 655th Street. Mr. Ludwig supported use of Route Alternative 3.

Mr. Ludwig also questioned whether induction from the HVTL would affect facilities of KM Telecom (Kasson Mantorville Telephone Company). KM Telecom has facilities running from County Road 14 to Highway 30.²⁰³

Joseph Wieners, a resident along the Preferred Route, expressed concerns over the aesthetic impact arising from the Preferred Route and the Alternate Route. He also expressed concern over the potential decrease in property values and impaired development opportunities resulting from the installation of an HVTL on either of those two routes. Mr. Wieners supported use of Route Alternative 3.²⁰⁴

Corey Carlson, a resident along the Preferred Route, supported use of Route Alternative 3. He suggested that redundancy was not more important than the other considerations in selecting a route. With the distribution lines in the area, he contended that having a line on both sides of the road would have a greater effect on the aesthetic impact of the HVTL. Mr. Carlson noted that there is already an HVTL crossing of Salem Creek and using that same location mitigates the impact of the crossing when compared to the Preferred Route, crossing Salem Creek along a road right-of-way.²⁰⁵

Theresa Horvei noted that the Alternate Route was less preferred primarily due to the difficulty in crossing the Salem Creek area. She contended that the inherent risk in running the Preferred Route over a natural gas pipeline demonstrated a greater significance and should be mitigated to protect residents along the Preferred Route. She suggested that Xcel Energy may prefer a route to the west to be nearer to the proposed Pleasant Valley wind farm. Ms. Horvei asked if the potential impact of lightning striking a power pole in the vicinity of a gas line had been assessed.²⁰⁶

²⁰² Byron Evening Public Hearing Transcript at 36-37, 40.

²⁰³ Byron Evening Public Hearing Transcript at 44-47.

²⁰⁴ Byron Evening Public Hearing Transcript at 48-52.

²⁰⁵ Byron Evening Public Hearing Transcript at 52-54.

²⁰⁶ Byron Evening Public Hearing Transcript at 56-60.

Written Comments

Written comments regarding the Project were accepted until November 8, 2010. The ALJ has not reproduced the written comments in their entirety, as much of the commentary offered is similar in substance and often recites information from other sources (such as the DEIS) which is analyzed in the Findings above.

Tim Clemens, Greenway Co-op General Manager, indicated that the Co-op has a corn bunker on its property that is located approximately 50 feet from the existing 345 kV line, near its entry into the Byron Substation. Mr. Clemens expressed concern that either the Alternate Route or Route Alternative 3 would result in the right-of-way encroaching on the Co-op's property. Mr. Clemens supported the Preferred Route as the only route option that did not pass close to the property.²⁰⁷

Todd Rauen disputed Xcel Energy's assertions regarding reliability for selecting the Preferred Route. Mr. Rauen contended that a storm powerful enough to blow down a power line would cover the distance between the multiple lines as configured in this proceeding. He also noted that the aesthetic and human impacts of paralleling the existing 345 kV were significantly lower than those of the Preferred Route. He also urged adoption of a route away from roadways, to prevent accidents from automobiles crashing into the poles.²⁰⁸

Peter Reinarts, P.E., of Rock Dell Township, noted that power lines similar to those of the Project "have been built over the past 100 years in residential areas near homes, school, and churches with no adverse impacts to the community or its residents." Mr. Reinarts also maintained that the primary technical reason against this third option is its adverse impact on grid reliability. He asserted that Xcel Energy's Preferred Route provided the greatest level of reliability to the power grid. Mr. Reinarts noted that this route was selected "in conjunction with neighboring utilities, the Midwest ISO, and the Midwest Reliability Organization." He maintained that, in the summer of 1998, a severe storm brought this existing 345 kV line down resulting in a separation of Minnesota from the Eastern Interconnect.²⁰⁹ He also suggested that affected residents would soon organize in opposition to Route Alternative 3.²¹⁰

Corey Carlson submitted a written comment that restated his oral comments and questioned whether the Preferred Route, being built near residences could have an impact on human health through the effects of long-lasting exposure to electrical fields.

²⁰⁷ eDockets No. 201011-56359-02 (eFiled November 9, 2010).

²⁰⁸ eDockets No. 201011-56359-02 (eFiled November 9, 2010).

²⁰⁹ This comment appears to be a reference to the outage that occurred on June 25, 1998, when lightning strikes resulted in two 345 kV lines (Prairie Island-Byron and King-Eau Claire) and one 161 kV line (Alma-Rock Elm) being taken out of service, with an overall outage period of 19 hours.. See .1998 *System Disturbances*, at 13 (North American Electric Reliability Council, May 2001) (<http://www.nerc.com/files/disturb98.pdf>).

²¹⁰ eDockets No. 201011-56359-02 (eFiled November 9, 2010).

He noted that the DEIS had concluded that the Preferred Route did not improve reliability of the 345 kV line. Mr. Carlson also suggested that the Preferred Route would have a greater impact on vegetation compared to Route Alternative 3.²¹¹

Todd Humphrey submitted a written comment that restated his oral comments. He also maintained that:

Power lines are dangerous, affect property values and are ugly. They should not should be located near people and traffic, or where future homesteads will be. They should be hidden as much as they can within reason. In this case there is no reason. There are viable and feasible alternatives. Options 2 or 3 (or bypassing county line road/650 street) meets this criteria.²¹²

Michael Madery and Anita Madery submitted a written comment that restated Mr. Madery's oral comments. They also identified potential impacts to their property and to the historic property owned by Mr. Madery's mother arising from the selection of the Preferred Route. They also expressed concern over stray voltage generated by that route. Both the Maderys expressed their support for Route Alternative 3.²¹³

Joseph Weiners restated his oral comments in a written comment. He also restated a number of points from the DEIS that supported the adoption of Route Alternative 3. Mr. Weiners suggested that the aesthetic impact of the Preferred Route would prevent him from being able to subdivide his property for residential development. He also suggested that, with recent electricity consumption down, there is no compelling need for an additional power line.²¹⁴

Lorraine Ludwig expressed concern over the potential impact of routing the power line along the Preferred Route because it would pass through the drain field of her septic system. She suggested that the proposed power line would reduce the value of her property.²¹⁵

Warren Fay, a resident of Canisteo Township, suggested that, if the Preferred Route is adopted, that it would cross to the east side of the road when the power line reaches their property to avoid significant tree loss. Mr. Fay supported adoption of an alternative route as a means of avoiding this impact.²¹⁶

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²¹¹ eDockets No. 201011-56614-02 (eFiled November 17, 2010).

²¹² eDockets No. 201011-56614-02 (eFiled November 17, 2010).

²¹³ eDockets No. 201011-56642-02 (eFiled November 17, 2010).

²¹⁴ eDockets No. 201011-56642-02 (eFiled November 17, 2010).

²¹⁵ eDockets No. 201011-56642-02 (eFiled November 17, 2010).

²¹⁶ eDockets No. 201011-56642-02 (eFiled November 17, 2010).